

On a new species of Protrinemurinae (Nicoletiidae, Zygentoma, Insecta) from the Malaysian Borneo

by

Luis F. MENDES *

With 15 figures

ABSTRACT

The new species *Trinemophora echinata* is described from Sabah (northern Borneo). It differs from the three other known species of this genus by a modified chaetotaxy of femora and tibiae of all legs, in the male. This very primitif genus of Nicoletiidae is recorded for the first time from the Oriental region; it was only known, previously, from the Neotropical region (two species from Chile) and from the eastern mediterranean subregion (one species from Turkey).

INTRODUCTION

In the present paper, *Trinemophora echinata* n. sp., from the malaysian Borneo is described. The occurrence of this genus in the Indo-malaysian Subregion of the Oriental Region, reinforces the hypothesis (MENDES 1988) of the notorious primitiveness of the Protrinemurinae among the Nicoletiidae, reflected also by an actual relict geographical distribution. *Trinemophora* Schaeffer, 1897 has previously been recorded only in the southwestern Neotropical Region (Chilean Subregion) and in the Mediterranean Subregion of the Palaearctic Region. The only other described genus in the Protrinemurinae, *Protrinemura* Silvestri, 1942, is known to occur in the southeastern area of the Manchurian Subregion and in the eastern Mediterranean Subregion, both from the Palaearctic Region.

The only collected specimen, deposited in the entomological collection of the Muséum d'histoire naturelle de Genève, Switzerland, has been kindly loaned by Dr. Bernd Hauser, to whom we are deeply great full.

* Departamento de Zoologia e Antropologia of the Faculdade de Ciências de Lisboa. Centro de Zoologia of the Instituto de Investigação Científica Tropical. Fellow of the I.N.I.C. — PL 2 R. da Junqueira 14, P-1300 Lisboa, Portugal.

DESCRIPTION

***Trinemophora echinata* n. sp. (Figs 1-15)**

MATERIAL EXAMINED: MALAYISIA — Borneo Island, Sabah area: route de Kimanis, à 16 milles de Keningau: hélicoptère, prélèvement de sol en forêt brumeuse (extraction par appareil Berlese), 1380 m, leg. Bernd Hauser, 14.III.1983 (PAL-83/13), 1♂ holotypus.

Body length: 4.9 mm; thorax length: 1.4 mm; thorax width: 1.1 mm; cercus length: 3.2 mm; terminal filament damaged, the total length: 7.0 mm; antennae both damaged, only a few articles of the flagellum preserved.

Body long and narrow, parallel-sided, whitish, devoided of scales and without hypodermal pigment.

Head as in Fig. 1, with some short macrochaetae, mainly in the marginal areas, and with very numerous microchaetae. Antennae strongly damaged, preserved no more than 16 articles in the flagellum; scapus and pedicellus without special feathures, the pedicellus devoided of apophysis and without any glandular area. Mandibles strong, with several apical acute teeth. Maxillae without prosthema (Fig. 2), the lacinia with two inaequal strongly sclerotized apical teeth, 5-6 simple lamelated hyalin processes and 6-7 strong setae: galea longer than the lacinia, with two well developed apical cones and a thick cylindrical sensilla. Maxillary palp (Figs 3-4) short, its apical article long as 1.5 times the penultimate, 4-5 times longer than wide and provided apically with several specialized sensillae. Labial palp as in Fig. 5, its apical article almost circular and provided with 6 sensorial papillae.

Pro- (Fig. 6), meso- and metanotum (Fig. 7), with the hind margin progressively more concave, almost twice wider than long, with abundant marginal macrochaetae and very numerous discal short setae; in the meso and metanotum the macrochaetae occur only in the lateral and posterior borders, but in the pronotum they are present also along the anterior margin.

Legs with specialized chaetotaxy in the femur and tibia as in Figs 8-13. P I with a row of sharp and stout spiniform setae in the outer margin of the ventral femur and with a similar row in the inner ventral tibia. P II with a ventral inner row of such setae in the femur and tibia and also a few ones in the apical ventral outer margin of tibia. P III with a ventral inner row of setae of the same type in the femur and tibia, its outer surface devoided of specialized chaetotaxy. Tarsus four-articled, the praetarsus simple; lateral claws clearly stronger than the claw-like empodium.

Urotergites with a transversal hind row of 10-14 macrochaetae, each one longer than the tergite, the infralateral stronger; surface of the sclerites covered with abundant thin setae. Xth urotergite (Fig. 14) short and wide, with a few thin setae and with 2 + 2 large and strong macrochaetae in the posterolateral angles; distance between the less excentric pair of macrochaetae (1/6 shorter than the more lateral ones) less than their own length (1/4 shorter).

Urosternites typical, entire, with abundant thin and short setae and with 14-16 marginal macrochaetae shorter than the length of the sternites, less numerous (10 macrochaetae) in the VIIIth sternite. Abdominal stylets on the VIIIth and IXth segments, the exsertil vesicles absent. IXth coxites free (Fig. 15), provided with one macrochaeta external to the insertion of the stylet. Paramera subcylindrical, longer than the apical margin of the coxite but much shorter than the stylet (attainig the 2/3 to 1/2 of the stylet length) with short thin setae and, mainly in the apical area, with thin and elongated glandular hairs. Penis short, with subtriangular aperture.

Cerci and terminal filament (as the ventral surface of the Xth urotergite), devoided of transformed chaetotaxy.

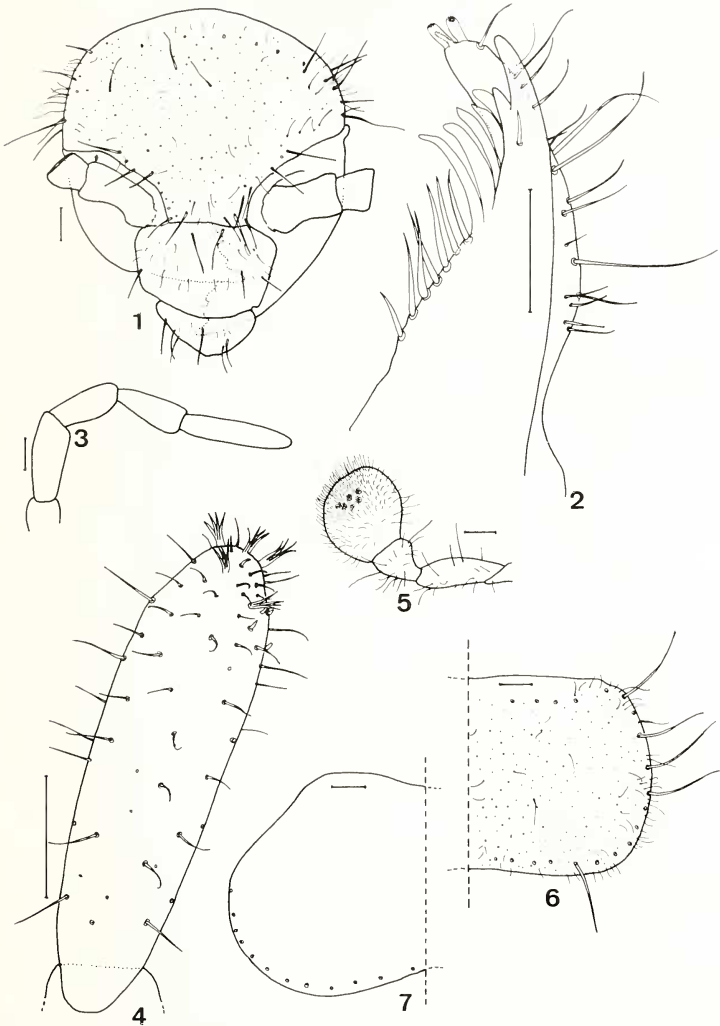


FIG. 1-7.

Trinemophora echinata n. sp.

Fig. 1: Head; Fig. 2: Galea and lacinia of the maxilla; Fig. 3: Maxillary palp;
 Fig. 4: *Ibid.*, apical article; Fig. 5: Labial palp; Fig. 6: Pronotum;
 Fig. 7: Metanotum (only the insertion of the macrochaetae represented). Scales: 0.1 mm.

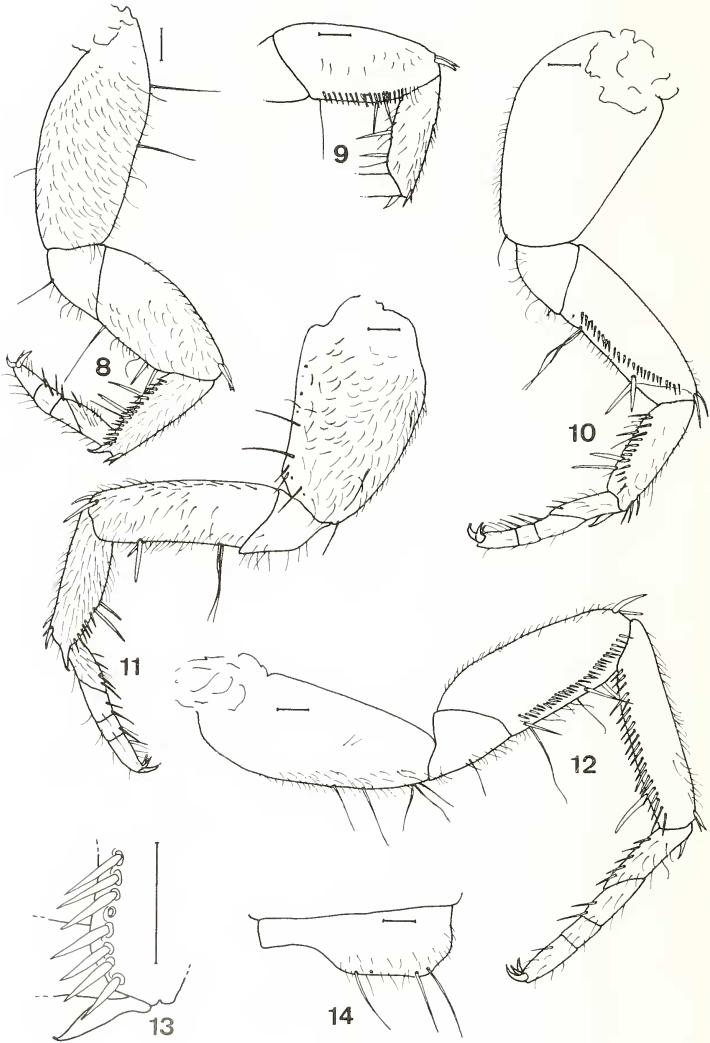


FIG. 8-14.

Trinemophora echinata n. sp.

Fig. 8: P I, inner surface; Fig. 9: *Ibid.*, outer surface of femur and tibia; Fig. 10: P II, inner surface; Fig. 11: *Ibid.*, outer surface; Fig. 12: P III, inner surface; Fig. 13: *Ibid.*, detail of the chaetotaxy of the distal inner ventral tibia; Fig. 14: Xth urotergite. Scales: 0.1 mm.

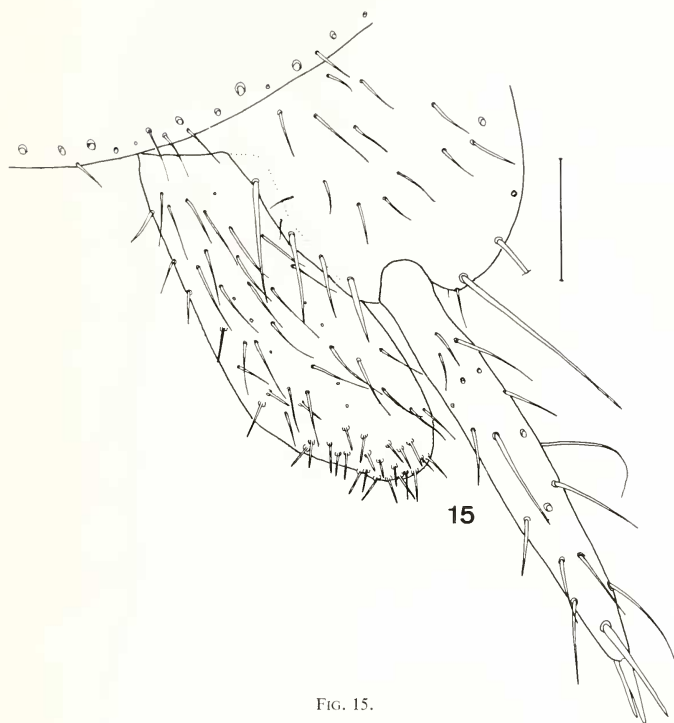


FIG. 15.

Trinemophora echinata n. sp.

Fig. 15: Hind border of the VIIIth urosternite, left IXth coxite and left paramerum. Scale: 0.1 mm.

Derivatio nominis — The new species is named *Trinemophora echinata* due to the rows of spiniform setae present in the ventral femur and tibia in all legs, at least in the male sex.

DISCUSSION

Trinemophora echinata n. sp. is easily distinguishable from all the described species in the genus, as it is the only to present strong spiniform setae longitudinally arranged in the ventral surface of all the legs (female unknown); besides, the apical article of the labial palp is clearly more enlarged than in the remaining *Trinemophora*. With two pairs of abdominal stylets, the new species is more similar to *T. michaelsoni* (SCHAEFFER, 1897 in ESCHERICH

1905), from Chile, and to *T. bitschiana* (WYGODZINSKY, 1959) from Turkey, than to *T. schaefferi* (SILVESTRI, 1905), also from Chile, the only species known in the genus with one only pair of abdominal stylets. The length and vigour of the paramera are much more similar to those presented by the New World species than to what is described to *T. bitschiana*.

RÉSUMÉ

Trinemophora echinata n. sp. est décrite de l'aire du Sabah (Bornéo septentrional). La nouvelle espèce diffère des trois autres espèces du genre déjà décrites par les modifications de la chétotaxie des fémurs et des tibias de toutes les pattes (sur le mâle). Ce genre de Nicoletiidae, très primitif, est signalé pour la première fois de la région orientale; jusqu'à présent, on ne le connaissait que de la région néotropicale (deux espèces du Chili) et de l'est de la sous-région méditerranéenne (une espèce de Turquie).

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